
DAVID PIKE, Memorial University of Newfoundland

A disproof of Tutte's conjecture based on twofold triple systems

In 1984, Colbourn and Johnstone presented a twofold triple system for which the corresponding 2-block-intersection graph was connected but not Hamiltonian. A recent paper by Erzurumluoğlu and Pike established that such a twofold triple system exists for every order $v \equiv 0$ or $1 \pmod{3}$ such that $v \geq 6$, except for $v \in \{7, 9, 10\}$. However, it remained the case that all of the known examples were for twofold triple systems having non-bipartite 2-block-intersection graphs. Bipartite examples (which constitute counterexamples to Tutte's 1971 conjecture that every 3-connected cubic bipartite graph is Hamiltonian) have now been found and will be described in this talk. This is joint work with Rosalind Cameron.